

CLAIMS:-

1. A method of generating a transition template suitable for insertion between a past reference picture and a future reference picture in a compressed digital data stream, the method including the steps of:

generating a series of transition pictures including a first transition picture and a last transition picture wherein each transition picture includes a series of rows of macroblocks, each row including a first macroblock and a last macroblock; and

designating at least some of the macroblocks within each transition picture as either first predefined transition macroblocks or second predefined transition macroblocks; and

designating a boundary between any first predefined transition macroblocks and neighbouring second predefined transition macroblocks as part of a transition boundary;

designating all or almost all of the macroblocks in the first transition picture as first predefined transition macroblocks;

for each new transition picture:

copying a previous transition picture to form the next synthesised picture;

changing some of the first predefined transition macroblocks in the new transition picture to second predefined transition macroblocks so as to change the position of the transition boundary; and

continuing to copy and change pictures until the most recently created transition picture consists entirely or almost entirely of second predefined transition macroblocks.

2. A method according to claim 1 wherein the first pre-defined transition macroblocks include one or more of:

- (a) past copy macroblocks (PCMs) which copy a corresponding macroblock in the past reference picture;
- 5 (b) future copy macroblocks (FCMs) which copy a corresponding macroblock in the future reference picture;
- (c) merge macroblock (MMs) which average the corresponding macroblocks from the past and future reference pictures;
- (d) offset copy macroblocks which references the past reference picture (POCM);
- 10 (e) offset copy macroblocks which references the future reference picture (FOCM)
- (f) future fading macroblocks (FFMs) which reference the future reference picture and add a non-zero intensity offset to increase or decrease its intensity; or
- (g) past fading macroblocks (PFMs) which reference the past reference picture and add a non-zero intensity offset to increase or decrease its intensity.

3. A method according to claim 1 wherein the second pre-defined transition macroblocks include one or more of:

- (a) past copy macroblocks (PCMs) which copy a corresponding macroblock in the past reference picture;
- 5 (b) future copy macroblocks (FCMs) which copy a corresponding macroblock in the future reference picture;

(c) merge macroblock (MMs) which average the corresponding macroblocks from the past and future reference pictures;

(d) offset copy macroblocks which references the past reference picture (POCM);

(e) offset copy macroblocks which references the future reference picture (FOCM)

(f) future fading macroblocks (FFMs) which reference the future reference picture and add a non-zero intensity offset to increase or decrease its intensity; or

(g) past fading macroblocks (PFMs) which reference the past reference picture and add a non-zero intensity offset to increase or decrease its intensity.

4. A transition template suitable for insertion between a past reference picture and a future reference picture in a compressed digital data stream, the template including:

a series of transition pictures wherein each transition picture includes a series of rows of macroblocks, each row including a first macroblock and a last macroblock;

wherein at least some of the macroblocks are pre-defined transition macroblocks; and

wherein said pre-defined transition macroblocks are arranged in said transition pictures so as to give the impression that the future reference picture is incrementally replacing the past reference picture.

5. A template according to claim 4 wherein the pre-defined transition macroblocks include one or more of:

(a) past copy macroblocks (PCMs) which copy a corresponding macroblock in the

past reference picture;

5 (b) future copy macroblocks (FCMs) which copy a corresponding macroblock in the future reference picture;

(c) merge macroblock (MMs) which average the corresponding macroblocks from the past and future reference pictures;

(d) offset copy macroblocks which references the past reference picture (POCM);

10 (e) offset copy macroblocks which references the future reference picture (FOCM)

(f) future fading macroblocks (FFMs) which reference the future reference picture and add a non-zero intensity offset to increase or decrease its intensity; or

(g) past fading macroblocks (PFMs) which reference the past reference picture and add a non-zero intensity offset to increase or decrease its intensity.

6. A wipe transition template suitable for insertion between a past reference picture and a future reference picture in a compressed digital data stream, the template including:

a series of transition pictures including a first transition picture and a last transition picture wherein each transition picture includes a series of rows of macroblocks, each row including a first macroblock and a last macroblock; and

5 wherein the majority of the macroblocks are either:

past copy macroblocks (PCMs) which copy a corresponding macroblock in the past reference picture;

future copy macroblocks (FCMs) which copy a corresponding macroblock in the future

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reference picture; or

merge macroblock (MMs) which average the corresponding macroblocks from the past and future reference pictures.

7. A template according to claim 6 wherein the pictures in the wipe transition are constructed from some PCMs and some FCMs.

8. A template according to claim 6 wherein the first transition picture is predominantly constructed from PCMs and in subsequent pictures the PCMs are progressively replaced by FCMs.

9. A template according to claim 6 wherein the regions of PCMs are contiguous and the regions of FCMs are contiguous.

10. A template according to claim 9 wherein, in successive pictures, macroblocks along the boundary between the contiguous regions of PCMs and FCMs are converted from PCMs to FCMs.

11. A template according to claim 9 wherein for some of the transition pictures at least some of the PCMs are replaced in subsequent pictures by MMs and in later transition pictures those MMs are replaced by FCMs.